What is claimed is:

1.   A method for performing mobile IPv6 fast handover based on an access router (AR), comprising the
5   steps of:
a) if a mobile node is moved in a layer 2, receiving a modified RS message from a mobile node (MN) in the access router;
b) detecting movement of the mobile node in a layer 3
10   in the access router based on the modified RS message transmitted from the mobile node in the access router;
c) if the mobile node moves in the layer 3, generating a new Care of Address (CoA) of the mobile node in the access router;
15   d) performing Duplicate Address Detection (DAD) in the access router to inspect uniqueness of the generated CoA; and
e) transmitting a modified Router Advertisement (RA) message, which corresponds to the modified RS message
20   transmitted from the mobile node, to the mobile node in the access router.

2.   The method as recited in claim 1, wherein the step a) includes the steps of:
25   a1) receiving a reassociation request message from the mobile node in the access point; and
a2) transmitting a reassociation reply message corresponding to the reassociation request message to the mobile node in the access point.
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3.   The method as recited in claim 1, further comprising:
a3) receiving the modified RA message transmitted from the access router, using the CoA specified in the
35   modified RA message, which is transmitted from the

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access router, as a network interface address of the mobile node without DAD, and performing binding update in the mobile node.

5   4.   The method as recited in claim 1, wherein, in the step a), the access router receives the RS message from the mobile node as soon as the layer 2 handover is completed in the mobile node.

10   5.   The method as recited in claim 4, wherein, the step b), the movement of the mobile node in the layer 3 is detected by comparing a neighbor cache value of the access router and a layer 2 identifier of the mobile node included in the modified RS message, which is transmitted
15   from the mobile node.

6.   The method as recited in claim 5, wherein the modified RS message includes a flag which signifies the generation of CoA (CoA Generate).
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7.   The method as recited in claim 6, wherein the modified RA message includes a flag which signifies the generation of CoA (CoA Generate).

25   8.   The method as recited in claim 7, wherein the modified RA message includes a CoA which is generated in the step c).

9.   The method as recited in claim 8, wherein the
30   modified RA message includes a flag which signifies that the CoA is included in a prefix.